ABSTRACT

The present invention provides a method of operating a fuel cell including an anode, a cathode, a first passage, and a second passage, wherein the anode is disposed in the first passage and the cathode is disposed in the second passage, comprising: producing a non-explosive gaseous feed consisting of (i) at least one oxidizable component having a greater tendency to undergo oxidation relative to the anode, and (ii) a remainder, wherein the remainder is the predominant component in the gaseous feed and consists essentially of water vapor, and introducing the non-explosive gaseous feed to the first passage to form a first gaseous feed stream flowing through the first passage when the anode realizes a temperature effective to facilitate deteriorative oxidation of the anode in the presence of The non-explosive gaseous feed is provided to an oxidizing agent. mitigate or prevent anode oxidation and to mitigate or prevent the formation of potentially explosive gaseous mixtures. Additionally, the nonexplosive gaseous feed can provide a source of steam for reforming.

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